The Extension and Application of LinkWinds to EOSDIS

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LinkWinds

The Linked Windows Interactive Data System

Place holder for figure 1 - full screen dump of LinkWinds

LinkWinds

The Linked Windows Interactive Data System

System Description

- A visual data analysis environment built on an object-oriented model. Objects on screen are data, displays and controls. Displays can contain controls.
- Objects are made interdependent by interactively linking them. Links are one-way message paths. Functions like a graphical spreadsheet.
- A standard GUI with linking rules results in a direct manipulation interface which is highly interactive, easy to learn and retain, and uniform across all applications.
- Network-based groupware (MUSE) requires minimum bandwidth. Useful for cooperative scientific research, remote tutorials and user feedback. Language used also supports rerun script, journal and macro capability.

EOSDIS NRA Objectives and Status

- Modify and extend LinkWinds to support EOS science data management.
  - Support data search and retrieval by implementing new ways to bring data files in.
    - File Finder implemented in current release. (done)
    - Web Browser user selectable in current release. (done)
  - Design and develop interactive tools for ingestion of very large data files.
    - Data Objects - subset, group and concatenate.(done)

LinkWinds

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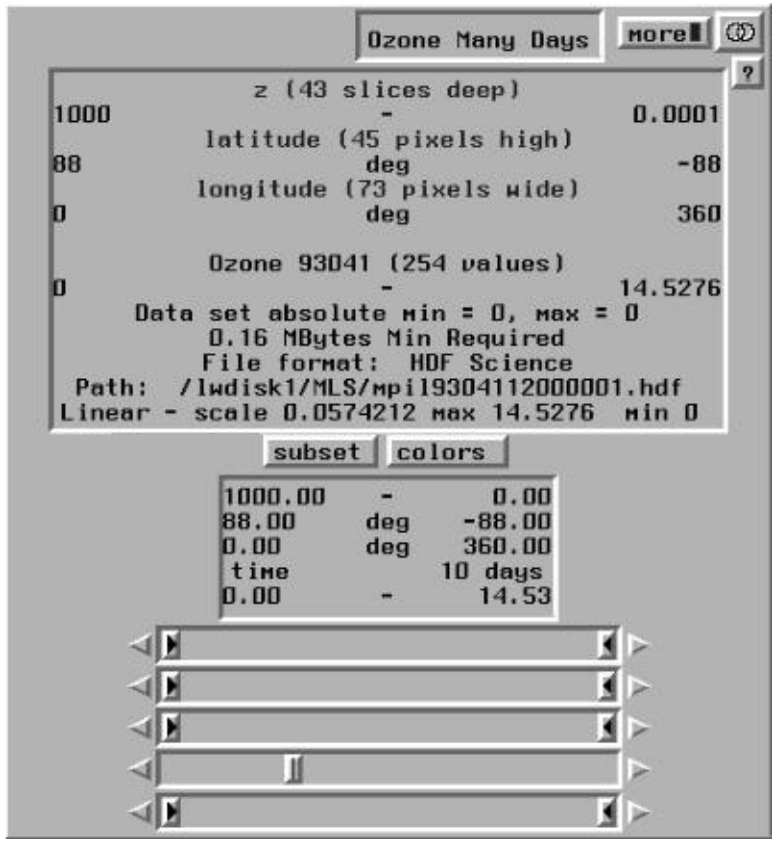
Data Object Interactivity

- Displays metadata.
- Supports subsetting operations
  - Sub-region selection.
  - pixel decimation.
- Data value renormalization.
- Concatenation of data.
- Handles 4-dimensional data.



LinkWinds

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Place hold for figure 2 - AVHRR1

Place holder for figure 3 - AVHRR2

EOSDIS NRA Objectives and Status (Cont'd)

- Develop displays and controls specific to display and intercomparison of EOS science data
  - Support new data formats and structures. (in process)
    - Irregular and/or sparsely sampled data.
    - Satellite and aircraft swath data (L1 & L2).
    - Navigation, geolocation and projection of swath data.
    - Time dependent geolocated station, path and event data.
    - Data from disparate sources and times.
- Port LinkWinds to other platforms. (in process)
- Support development of CORBA interface with UCLA effort. (in process)

LinkWinds

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Release of LinkWinds Version 2.1

- Released in August 1995.
- Available via anonymous ftp from:
  - JPL - twinky.jpl.nasa.gov (dir: /pub/LinkWinds). (LinkWinds Home Page is at http://linkwinds.jpl.nasa.gov/)
  - GSFC - eosdata.gsfc.nasa.gov (dir: /pub/contrib/LinkWinds).
  - NCSA - ftp.ncsa.uiuc.edu (dir: /HDF/contrib/LinkWinds).
- 325 JPL accesses to date; GSFC accesses unknown; NCSA accesses about 40% greater than JPL for total estimated 700 - 800 accesses.
- Distributing both SGI versions, and alpha-test Sun Solaris versions.
  - Sun versions exclude 3-D applications at this time. Porting of these is proceeding well.
  - Port to pentium-based Linux under way.

Planned Future Activities

- Continue to expand options for manipulation and subsetting input data.
  - Pixel averaging.
  - Data slice selection.
  - Data warping and boolean operations (intersection, union, etc).
- Incorporate SPICE and map projection capabilities into LinkWinds as data front-end filter and for control and display.
- Complete UAH Space-Time toolkit and use it to build LinkWinds controls and displays, providing:
  - advanced capabilities for subsetting swath and map projected data.
  - advanced capabilities for visually fusing and analytically comparing data from disparate sources.
  - automatic linking and synchronization of disparate data sets in space and time.

Planned Future Activities (Cont'd)

- Complete Sun port of 3-D applications. Complete Linux port and accomplish H-P port.
- Complete the development of CORBA-compliant interface with UCLA catalog browser.